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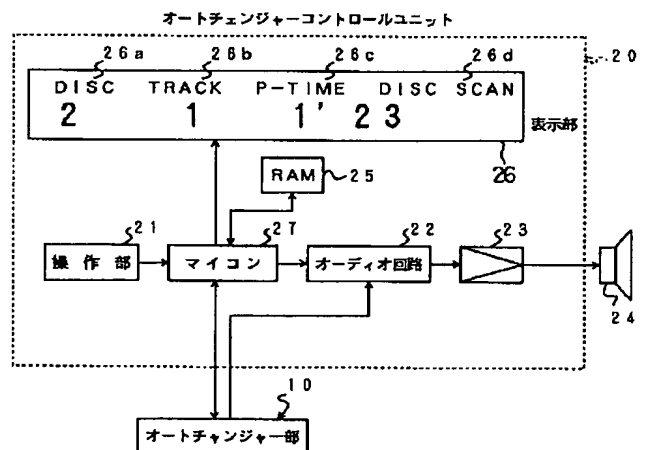
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(54) 【発明の名称】 ディスク再生装置

(57) 【要約】

【目的】 ディスクスキャン機能時におけるユーザーのディスク判別を確実にしたディスク再生装置を提供することにある。

【構成】 複数枚のディスクを収納すると共に、選択されたディスクを再生するオートチェンジャー部10と、オールスキャン指令又はディスクスキャン指令を入力する操作部21と、前記オールスキャン指令入力に応じて選択されたディスクに記録された各曲の先頭部分のみを前記オートチェンジャー部10にて所定時間、順次に再生させると共に、前記ディスクスキャン指令入力に応じて当該収納中の各ディスクを順次に選択し、当該選択されたディスクに記録された先頭曲のみを前記オートチェンジャー部10にて前記所定時間よりも長く再生させるマイコン27とを有している。



10 オートチェンジャー部 (ディスク収納手段、ディスク再生手段)

21 操作部 (操作手段)

27 マイコン (制御手段)

【特許請求の範囲】

【請求項 1】 複数枚のディスクを収納するディスク収納手段と、

選択されたディスクを再生するディスク再生手段と、

オールスキャン指令又はディスクスキャン指令を入力する操作手段と、

当該操作手段によるオールスキャン指令入力に応じて選択されたディスクに記録された各曲の先頭部分のみを前記ディスク再生手段にて所定時間、順次に再生させると共に、前記操作手段によるディスクスキャン指令入力に応じて前記ディスク収納手段に収納中の各ディスクを順次に選択し、当該選択されたディスクに記録された先頭曲のみを前記ディスク再生手段にて前記所定時間よりも長く再生させる制御手段とを有することを特徴とするディスク再生装置。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、複数枚のディスクを収納すると共に、当該収納されたディスクをスキャン再生するスキャンモード機能を備えたディスク再生装置に関する。

【0002】

【従来の技術】従来、このようなディスク再生装置のスキャンモード機能には、一枚のディスクに記録された全曲を対象としたオールスキャン機能と、当該装置内に収納された全ディスクを対象としたディスクスキャン機能とを有している。

【0003】前記オールスキャン機能とは、当該装置内に収納された複数枚のディスクの内、選択された一枚のディスクに記録された各曲を先頭曲から順次に選択し、当該選択された各曲の先頭部分のみを所定時間づつ再生させるようにしたものであり、ユーザーは当該選択されたディスクに係わる全曲について把握することができる。

【0004】また、前記ディスクスキャン機能とは、当該装置内に収納された複数枚のディスクを順次に選択し、当該選択されたディスクに記録された先頭曲のみを所定時間づつ再生させるようにしたものであり、ユーザーは当該装置内に収納された各ディスクが何のディスクであるかを判別することができる。

【0005】

【発明が解決しようとする課題】しかしながら、上記従来のディスク再生装置によれば、例えば先頭曲の先頭部分が、効果音としての波音を録音した曲や観客の拍手音しか聞こえないようなライブを録音した曲が記録されたディスクを対象にディスクスキャン機能を起動させた場合、当該ディスクの先頭曲の先頭部分を前記オールスキャン機能と同じ所定時間しか再生させないので、ユーザーは当該所定時間の再生を受聴して当該ディスクが何のディスクであるかを判別することができないといった問

題点があった。

【0006】本発明は上記問題点を鑑みてなされたものであり、その目的とするところは、ディスクスキャン機能時におけるユーザーのディスク判別を確実にするディスク再生装置を提供することにある。

【0007】

【課題を解決するための手段】上記目的を達成するために本発明のディスク再生装置は、複数枚のディスクを収納するディスク収納手段と、選択されたディスクを再生するディスク再生手段と、オールスキャン指令又はディスクスキャン指令を入力する操作手段と、当該操作手段によるオールスキャン指令入力に応じて選択されたディスクに記録された各曲の先頭部分のみを前記ディスク再生手段にて所定時間、順次に再生させると共に、前記操作手段によるディスクスキャン指令入力に応じて前記ディスク収納手段に収納中の各ディスクを順次に選択し、当該選択されたディスクに記録された先頭曲のみを前記ディスク再生手段にて前記所定時間よりも長く再生させる制御手段とを有することを特徴とする。

【0008】

【作用】かかる構成により、本発明のディスク再生装置によれば、オールスキャン指令入力に応じて選択されたディスクに記録された各曲の先頭部分のみをディスク再生手段にて所定時間、順次に再生させると共に、ディスクスキャン指令入力に応じてディスク収納手段に収納中の各ディスクを順次に選択し、当該選択されたディスクに記録された先頭曲のみを前記ディスク再生手段にて前記所定時間よりも長く再生させるようにしたので、例えば先頭曲の先頭部分が、効果音としての波音を録音した曲や観客の拍手音しか聞こえないようなライブを録音した曲が記録されたディスクを対象にディスクスキャン指令を受けた場合であっても、ユーザーは当該装置内のディスク判別を確実に行うことができる。

【0009】

【実施例】以下、図面に基づいて本発明のディスク再生装置を適用したCDオートチェンジャー装置の実施例について説明する。図1は本発明のディスク再生装置を適用したCDオートチェンジャー装置内部の概略構成を示すブロック図である。

【0010】図1に示すCDオートチェンジャー装置においては、複数枚のディスクを図示せぬ収納領域に収納すると共に、当該収納領域に収納された各ディスクを選択し、当該選択されたディスクに対して再生動作等の様々なメカ動作を実行するオートチェンジャー部10と、当該オートチェンジャー部10を制御するオートチェンジャーコントロールユニット20とを有している。尚、請求項1記載のディスク再生手段及びディスク収納手段は当該オートチェンジャー部10に相当するものである。

【0011】前記オートチェンジャーコントロールユニ

ット 20 は、様々な指令を入力する操作手段である操作部 21 と、前記オートチェンジャー部 10 にて再生されたディスクの再生信号にオーディオ処理を施すオーディオ回路 22 と、当該オーディオ処理を施された再生信号を増幅するアンプ部 23 と、当該増幅された再生信号を音声出力するスピーカ 24 と、様々な情報データを記憶する RAM 25 と、様々な情報を表示出力する表示部 26 と、当該オートチェンジャーコントロールユニット 20 全体を制御する制御手段であるマイコン 27 とを有している。

【0012】前記操作部 21 には、図示せぬが、通常の再生指令を入力する再生キー、当該装置内の所望ディスクを選択するディスク選択キー、当該選択されたディスクに記録された各曲の先頭部分のみを順次に所定時間再生させるオールスキャン指令を入力するオールスキャンキーや、当該装置内の各ディスクを順次に選択し、当該選択されたディスクの先頭曲に係わる先頭部分を所定時間再生させるディスクスキャン指令を入力するディスクスキャンキーとを有している。尚、前記オールスキャン指令の再生時間は例えば 10 秒間であり、前記ディスクスキャン指令の再生時間は前記オールスキャン指令に係わる再生時間よりも長い、例えば 30 秒間とするものであり、これら再生時間の設定を前記マイコン 27 が管理するものである。

【0013】また、前記表示部 26 には、当該装置内の各ディスクを識別するディスク番号を表示するディスク番号表示領域 26a と、再生中の曲を識別するトラック番号を表示するトラック番号表示領域 26b と、当該再生中の曲に係わる演奏時間等をカウント表示させる P-TIME 表示領域 26c と、例えばディスクスキャン指令を受けてディスクスキャンモードを設定した場合等に現在の設定モードを表示させるモード表示領域 26d とを有している。

【0014】前記マイコン 27 は、当該装置への電源投入と同時に、当該装置内に収納された各ディスクの TOC 情報を前記オートチェンジャー部 10 に読み取らせ、当該読み取られた TOC 情報を前記 RAM 25 に記憶させるようにした。

【0015】では、次に当該 CD オートチェンジャー装置の動作について説明する。図 2 は当該 CD オートチェンジャー装置のスキャンモード処理におけるマイコン 27 の処理動作を示すフローチャートである。

【0016】当該スキャンモード処理とは、前記オールスキャン指令の入力を受けると、当該選択されたディスクの各曲における先頭部分のみを順次に 10 秒間づつ再生させると共に、前記ディスクスキャン指令の入力を受けると、当該装置内に収納された各ディスクを選択し、当該選択されたディスクの先頭曲のみを前記オールスキャンの再生時間よりも長い、30 秒間づつ再生させるようにしたものである。

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【0017】図 2 においてマイコン 27 は、前記操作部 21 におけるオールスキャンキーが入力されたか否かを判定する（ステップ S11）。当該オールスキャンキーが入力されたのであれば、当該マイコン 27 内のスキャン再生タイマーに 10 秒間をセットし（ステップ S12）、前記 RAM 25 に記憶された TOC 情報に基づいて前記オートチェンジャー部 10 に当該選択された指定ディスクの先頭曲を再生させ（ステップ S13）、前記スキャン再生タイマーにてセットした 10 秒間が経過するまで、当該 10 秒間が経過したか否かを判定する（ステップ S14）。

【0018】当該 10 秒間が経過したのであれば、当該曲再生を停止させ（ステップ S15）、前記 RAM 25 に記憶された TOC 情報に基づいて当該指定ディスクに次曲があるか否かを判定する（ステップ S16）。当該指定ディスクに次曲があるのであれば、当該 TOC 情報に基づいて次曲を検索し（ステップ S17）、前記スキャン再生タイマーに 10 秒間をセットして（ステップ S18）、前記オートチェンジャー部 10 に当該次曲を再生させ（ステップ S19）、ステップ S14 に移行する。

【0019】また、ステップ S16 にて指定ディスクに次曲がなければ、当該スキャンモード処理の処理動作を終了する。

【0020】また、ステップ S11 にてオールスキャンキーが入力されたのでなければ、ディスクスキャンキーが入力されたのであるか否かを判定する（ステップ S20）。

【0021】当該ディスクスキャンキーが入力されたのであれば、前記オートチェンジャー部 10 に例えば予め設定された所定順序に基づいて当該装置内からディスクを選択させ（ステップ S21）、前記スキャン再生タイマーに 30 秒間をセットし（ステップ S22）、前記 RAM 25 に記憶された TOC 情報に基づいて、ステップ S21 にて選択されたディスクの先頭曲を前記オートチェンジャー部 10 に再生させ（ステップ S23）、前記スキャン再生タイマーにてセットされた 30 秒間が経過するまで、当該 30 秒間が経過したか否かを判定する（ステップ S24）。

【0022】当該 30 秒間が経過したのであれば、当該曲再生を停止させ（ステップ S25）、前記 RAM 25 に記憶された TOC 情報に基づいてディスクスキャン対象の残りディスクがあるか否かを判定する（ステップ S26）。当該残りのディスクがあれば、前記所定順序に基づいて前記オートチェンジャー部 10 に次のディスクを選択させ（ステップ S27）、前記スキャン再生タイマーに 30 秒間をセットし（ステップ S28）、ステップ S23 に移行する。

【0023】ステップ S26 にて残りディスク、すなわちディスクスキャン対象ディスクがなければ、当該スキ

ャンモード処理の処理動作を終了する。

【0024】上記実施例によれば、オールスキャン指令入力に応じて選択されたディスクに記録された各曲の先頭部分のみを、オートチェンジャー部10にて10秒間づつ順次に再生させると共に、ディスクスキャン指令入力に応じて当該装置内に収納中の各ディスクを順次に選択し、当該選択されたディスクに記録された先頭曲のみを、前記オートチェンジャー部10にて前記オールスキャン時よりも長い再生時間、すなわち30秒間づつ再生させるようにしたので、例えば先頭曲の先頭部分が、効果音としての波音を録音した曲や観客の拍手音しか聞こえないようなライブを録音した曲が記録されたディスクを対象にディスクスキャン指令を受けた場合であっても、ユーザーは当該装置内のディスク判別を確実に行うことができる。

【0025】尚、上記実施例においては、複数枚のCDディスクを収納するCDオートチェンジャー装置に適用して説明したが、LDやMDを対象としたオートチェンジャー装置についても適用可能であることは言うまでもない。

【0026】また、前記スキャン再生タイマーの設定時間を、オールスキャンの場合には10秒間及びディスクスキャンの場合は30秒間としたが、この数値の限りでないことはいうまでもない。

【0027】

*【発明の効果】上記のように構成された本発明のディスク再生装置によれば、オールスキャン指令入力に応じて選択されたディスクに記録された各曲の先頭部分のみをディスク再生手段にて所定時間、順次に再生させると共に、ディスクスキャン指令入力に応じてディスク収納手段に収納中の各ディスクを順次に選択し、当該選択されたディスクに記録された先頭曲のみを前記ディスク再生手段にて前記所定時間よりも長く再生させるようにしたので、例えば先頭曲の先頭部分が、効果音としての波音を録音した曲や観客の拍手音しか聞こえないようなライブを録音した曲に記録されたディスクを対象にディスクスキャン指令を受けた場合であっても、ユーザーは当該装置内のディスク判別を確実に行うことができる。

【図面の簡単な説明】

【図1】本発明のディスク再生装置を適用したCDオートチェンジャー装置内部の概略構成を示すブロック図である。

【図2】本実施例のCDオートチェンジャー装置のスキャンモード処理におけるマイコンの処理動作を示すフローチャートである。

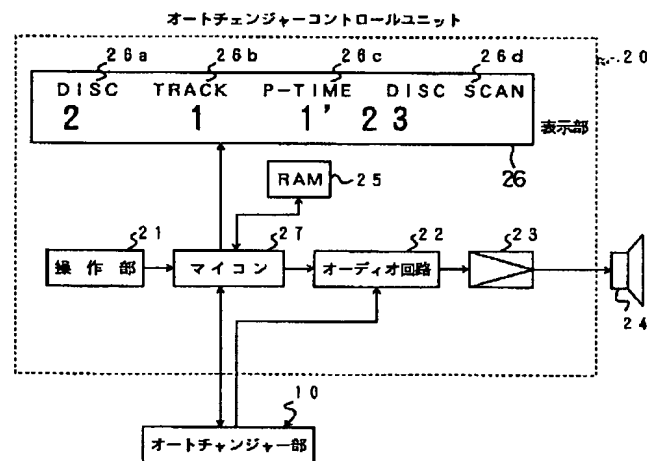
【符号の説明】

10 オートチェンジャー部（ディスク収納手段、ディスク再生手段）

21 操作部（操作手段）

27 マイコン（制御手段）

【図1】

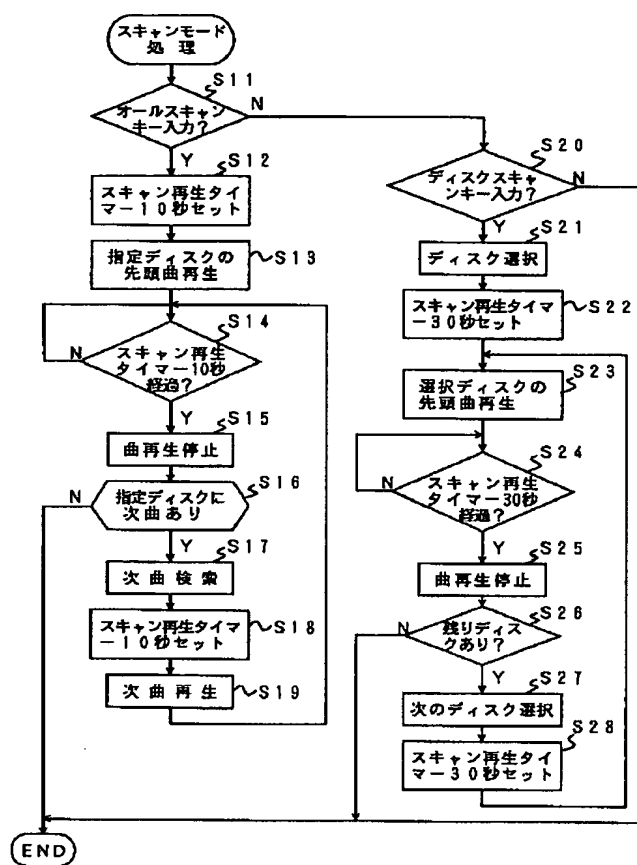


10 オートチェンジャー部（ディスク収納手段、ディスク再生手段）

21 操作部（操作手段）

27 マイコン（制御手段）

【図 2】



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(57) Abstract

Objects of the InventionIt is in providing the disk reproduction device which ensured disk discrimination of the user at the time of a disk scanning function.

Elements of the InventionIt comprises:

The autochanger part 10 which a disk of two or more sheets is stored, and plays a selected disk.

The final controlling element 21 which inputs all scan instructions or disk scan instructions.

Make predetermined time and sequential play only a head part of each music recorded on a disk selected according to said all scan command input in said autochanger part 10, and. The

microcomputer 27 which reproduces only head music which chose each disk under storage concerned one by one according to said disk scan command input, and was recorded on the selected disk concerned in said autochanger part 10 for a long time than said predetermined time.

Claim(s)

Claim 1 A disk reproduction device comprising:

A disk storing means which stores a disk of two or more sheets.

A disk reproducing means which plays a selected disk.

A control means which inputs all scan instructions or disk scan instructions.

Make predetermined time and sequential play only a head part of each music recorded on a disk selected according to an all scan command input by the control means concerned in said disk reproducing means, and. A control means which reproduces only head music which chose each disk under storage to said disk storing means one by one according to a disk scan command input by said control means, and was recorded on the selected disk concerned in said disk reproducing means for a long time than said predetermined time.

Detailed Description of the Invention

0001

Industrial Application This invention stores the disk of two or more sheets, and it relates to the disk reproduction device provided with the scanning mode function which carries out scan reproduction of the stored disk concerned.

0002

Description of the Prior Art Conventionally, in such a scanning mode function of a disk reproduction device, it has an all scanning function for the all songs recorded on the disk of one sheet, and a disk scanning function for all the disks stored in the device concerned.

0003 The inside of the disk of two or more sheets stored in the device concerned with said all scanning function, Choose from head music each music recorded on the selected disk of one sheet one by one, it is made to reproduce only the head part of each selected music concerned predetermined time every, and the user can grasp about the all songs concerning the selected disk concerned.

0004 With said disk scanning function, the disk of two or more sheets stored in the device concerned is chosen one by one, It is made to reproduce only the head music recorded on the selected disk concerned predetermined time every, and the user can distinguish what disk each disk stored in the device concerned is.

0005

Problem(s) to be Solved by the Invention However, according to the above-mentioned conventional disk reproduction device, for example the head part of head music, When a disk scanning function is started for the disk with which the music which recorded the live which hears only the applause sound of the music and spectator who recorded the wave sound as a sound effect was recorded, Since only the same predetermined time as said all scanning function did not reproduce the head part of the head music of the disk concerned, the user listened to playback of the predetermined time concerned, and had the problem that it could not be distinguished what disk the disk concerned is.

0006 This invention is made in view of the above-mentioned problem, and there is a place made into the purpose in providing the disk reproduction device which ensures disk discrimination of the user at the time of a disk scanning function.

0007

Means for Solving the Problem To achieve the above objects, this invention is characterized by a disk reproduction device comprising the following.

A disk storing means which stores a disk of two or more sheets.

A disk reproducing means which plays a selected disk.

A control means which inputs all scan instructions or disk scan instructions.

Make predetermined time and sequential play only a head part of each music recorded on a disk selected according to an all scan command input by the control means concerned in said disk

reproducing means, and. A control means which reproduces only head music which chose each disk under storage to said disk storing means one by one according to a disk scan command input by said control means, and was recorded on the selected disk concerned in said disk reproducing means for a long time than said predetermined time.

0008

Function According to the disk reproduction device of this invention, make predetermined time and sequential play only the head part of each music recorded on the disk selected according to the all scan command input in a disk reproducing means by this composition, and. Since it was made to reproduce only the head music which chose each disk under storage to a disk storing means one by one according to the disk scan command input, and was recorded on the selected disk concerned in said disk reproducing means for a long time than said predetermined time, For example, even if the head part of head music is a case where disk scan instructions are received for the disk with which the music which recorded the live which hears only the applause sound of the music and spectator who recorded the wave sound as a sound effect was recorded, the user can perform disk discrimination in the device concerned certainly.

0009

Example Hereafter, the example of the CD autochanger device which applied the disk reproduction device of this invention based on the drawing is described. Drawing 1 is a block diagram showing the outline composition inside the CD autochanger device which applied the disk reproduction device of this invention.

0010 In the CD autochanger device shown in drawing 1, The autochanger part 10 which it stores to the storing area which does not illustrate the disk of two or more sheets, and chooses each disk stored by the storing area concerned, and performs various mechanism operations of reproduction motion etc. to the selected disk concerned, It has the autochanger control unit 20 which controls the autochanger part 10 concerned. The disk reproducing means according to claim 1 and a disk storing means are equivalent to the autochanger part 10 concerned.

0011 Said autochanger control unit 20, The final controlling element 21 which is a control means which inputs various instructions, and the audio circuit 22 which performs audio processing to the regenerative signal of the disk played in said autochanger part 10, The amplifier part 23 which amplifies the regenerative signal to which the audio processing concerned was performed, It has the loudspeaker 24 which carries out voice response of the amplified regenerative signal concerned, RAM25 which memorize various information data, the indicator 26 which carries out the display output of various information, and the microcomputer 27 which is the control means which control the autochanger control unit 20 whole concerned.

0012 Although not illustrated in said final controlling element 21, The reproduction key which inputs the usual reproduction command, the disk selection key which chooses the request disk in the device concerned, The all scan key which inputs the all scan instructions which carry out predetermined time playback only of the head part of each music recorded on the selected disk concerned one by one, Each disk in the device concerned is chosen one by one, and it has a disk scan key which inputs the disk scan instructions which carry out predetermined time playback of the head part concerning the head music of the selected disk concerned. The regeneration time of said all scan instructions is for 10 seconds, the regeneration time of said disk scan instructions is longer than the regeneration time concerning said all scan instructions, for example, is carried out for 30 seconds, and said microcomputer 27 manages setting out of these regeneration time.

0013 The disk number viewing area 26a which displays the disk number which identifies each disk in the device concerned on said indicator 26, The track number viewing area 26b which displays the track number which identifies the music under reproduction, It has the P-TIME viewing area 26c which indicates the performance time concerning the music under playback concerned, etc. by a count, and 26 d of mode display fields on which the present setting-out mode is displayed when disk scan mode is set up, for example in response to disk scan instructions.

0014 Said microcomputer 27 makes said autochanger part 10 read the TOC information of each disk stored in the device concerned simultaneously with powering on to the device concerned, and it was made to make said RAM25 memorize the read TOC information concerned.

0015 Operation of the CD autochanger device concerned is explained below. Drawing 2 is a flow chart which shows the processing operation of the microcomputer 27 in scanning mode processing of the CD autochanger device concerned.

0016 With the scanning mode processing concerned, if the input of said all scan instructions is

received, will reproduce only the head part in each music of the selected disk concerned for 10 seconds at a time one by one, and. If the input of said disk scan instructions is received, each disk stored in the device concerned is chosen, and it is made to reproduce only the head music of the selected disk concerned, while **30 seconds at a time** it is longer than the regeneration time of said all scan.

0017In drawing 2, the microcomputer 27 judges whether the all scan key in said final controlling element 21 was inputted (Step S11). If the all scan key concerned was inputted, for 10 seconds will be set to the scan reproduction timer in the microcomputer 27 concerned (Step S12), Until while **10 seconds** making said autochanger part 10 play the head music of the selected specification disk concerned based on the TOC information memorized by said RAM25 (Step S13) and setting by said scan reproduction timer passes, It is judged whether for the 10 seconds concerned passed (Step S14).

0018If for the 10 seconds concerned passed, the music playback concerned will be stopped (Step S15), and it will be judged whether based on the TOC information memorized by said RAM25, the specification disk concerned has the following music (Step S16). If the specification disk concerned has the following music, the following music will be searched based on the TOC information concerned (Step S17), Set for 10 seconds to said scan reproduction timer (Step S18), said autochanger part 10 is made to reproduce the following music concerned (Step S19), and it shifts to Step S14.

0019At Step S16, if there is no following music in a specification disk, the processing operation of the scanning mode processing concerned will be ended.

0020If an all scan key was not inputted at Step S11, it will be judged whether the disk scan key was inputted (Step S20).

0021If the disk scan key concerned was inputted, a disk will be made to choose from the inside of the device concerned based on the specified order beforehand set as said autochanger part 10, for example (Step S21), For 30 seconds is set to said scan reproduction timer (Step S22), Said autochanger part 10 is made to play the head music of the disk selected at Step S21 based on the TOC information memorized by said RAM25 (Step S23), It is judged whether for the 30 seconds concerned passed until while **30 seconds** being set by said scan reproduction timer passes (Step S24).

0022If for the 30 seconds concerned passed, the music playback concerned will be stopped (Step S25), and it will be judged whether based on the TOC information memorized by said RAM25, there is any remaining disk for a disk scan (Step S26). If there are the remaining disks concerned, the following disk will be made to choose it as said autochanger part 10 based on said specified order (Step S27), for 30 seconds will be set to said scan reproduction timer (Step S28), and it will shift to Step S23.

0023If it remains at Step S26 and there is no disk, i.e., the disk for a disk scan, the processing operation of the scanning mode processing concerned will be ended.

0024According to the above-mentioned example, reproduce only the head part of each music recorded on the disk selected according to the all scan command input one by one for 10 seconds at a time in the autochanger part 10, and. According to a disk scan command input, each disk under storage in the device concerned is chosen one by one, Since it was made to make it the every regeneration time longer than the time of said all scan in said autochanger part 10, i.e., for 30 seconds, play, only the head music recorded on the selected disk concerned, For example, even if the head part of head music is a case where disk scan instructions are received for the disk with which the music which recorded the live which hears only the applause sound of the music and spectator who recorded the wave sound as a sound effect was recorded, the user can perform disk discrimination in the device concerned certainly.

0025In the above-mentioned example, although it applied to the CD autochanger device which stores the CD disk of two or more sheets and being explained, it cannot be overemphasized that it can apply also to the autochanger device for LD or MD.

0026In the all scan of the set period of said scan reproduction timer, in the disk scan for 10 seconds, it was for 30 seconds, but it cannot be overemphasized that it is not a limitation of this figure.

0027

Effect of the InventionAccording to the disk reproduction device of this invention constituted as mentioned above, make predetermined time and sequential play only the head part of each music recorded on the disk selected according to the all scan command input in a disk reproducing means, and. Since it was made to reproduce only the head music which chose each disk under storage to a disk storing means one by one according to the disk scan command

input, and was recorded on the selected disk concerned in said disk reproducing means for a long time than said predetermined time, For example, even if the head part of head music is a case where disk scan instructions are received for the disk recorded on the music which recorded the live which hears only the applause sound of the music and spectator who recorded the wave sound as a sound effect, the user can perform disk discrimination in the device concerned certainly.

Industrial ApplicationThis invention stores the disk of two or more sheets, and it relates to the disk reproduction device provided with the scanning mode function which carries out scan reproduction of the stored disk concerned.

Description of the Prior ArtConventionally, in such a scanning mode function of a disk reproduction device, it has an all scanning function for the all songs recorded on the disk of one sheet, and a disk scanning function for all the disks stored in the device concerned.

0003The inside of the disk of two or more sheets stored in the device concerned with said all scanning function, Choose from head music each music recorded on the selected disk of one sheet one by one, it is made to reproduce only the head part of each selected music concerned predetermined time every, and the user can grasp about the all songs concerning the selected disk concerned.

0004With said disk scanning function, the disk of two or more sheets stored in the device concerned is chosen one by one, It is made to reproduce only the head music recorded on the selected disk concerned predetermined time every, and the user can distinguish what disk each disk stored in the device concerned is.

Effect of the InventionAccording to the disk reproduction device of this invention constituted as mentioned above, make predetermined time and sequential play only the head part of each music recorded on the disk selected according to the all scan command input in a disk reproducing means, and. Since it was made to reproduce only the head music which chose each disk under storage to a disk storing means one by one according to the disk scan command input, and was recorded on the selected disk concerned in said disk reproducing means for a long time than said predetermined time, For example, even if the head part of head music is a case where disk scan instructions are received for the disk recorded on the music which recorded the live which hears only the applause sound of the music and spectator who recorded the wave sound as a sound effect, the user can perform disk discrimination in the device concerned certainly.

FunctionAccording to the disk reproduction device of this invention, make predetermined time and sequential play only the head part of each music recorded on the disk selected according to the all scan command input in a disk reproducing means by this composition, and. Since it was made to reproduce only the head music which chose each disk under storage to a disk storing means one by one according to the disk scan command input, and was recorded on the selected disk concerned in said disk reproducing means for a long time than said predetermined time, For example, even if the head part of head music is a case where disk scan instructions are received for the disk with which the music which recorded the live which hears only the applause sound of the music and spectator who recorded the wave sound as a sound effect was recorded, the user can perform disk discrimination in the device concerned certainly.

ExampleHereafter, the example of the CD autochanger device which applied the disk reproduction device of this invention based on the drawing is described. Drawing 1 is a block diagram showing the outline composition inside the CD autochanger device which applied the

disk reproduction device of this invention.

0010In the CD autochanger device shown in drawing 1, The autochanger part 10 which it stores to the storing area which does not illustrate the disk of two or more sheets, and chooses each disk stored by the storing area concerned, and performs various mechanism operations of reproduction motion etc. to the selected disk concerned, It has the autochanger control unit 20 which controls the autochanger part 10 concerned. The disk reproducing means according to claim 1 and a disk storing means are equivalent to the autochanger part 10 concerned.

0011Said autochanger control unit 20, The final controlling element 21 which is a control means which inputs various instructions, and the audio circuit 22 which performs audio processing to the regenerative signal of the disk played in said autochanger part 10, The amplifier part 23 which amplifies the regenerative signal to which the audio processing concerned was performed, It has the loudspeaker 24 which carries out voice response of the amplified regenerative signal concerned, RAM25 which memorize various information data, the indicator 26 which carries out the display output of various information, and the microcomputer 27 which is the control means which control the autochanger control unit 20 whole concerned.

0012Although not illustrated in said final controlling element 21, The reproduction key which inputs the usual reproduction command, the disk selection key which chooses the request disk in the device concerned, The all scan key which inputs the all scan instructions which carry out predetermined time playback only of the head part of each music recorded on the selected disk concerned one by one, Each disk in the device concerned is chosen one by one, and it has a disk scan key which inputs the disk scan instructions which carry out predetermined time playback of the head part concerning the head music of the selected disk concerned. The regeneration time of said all scan instructions is for 10 seconds, the regeneration time of said disk scan instructions is longer than the regeneration time concerning said all scan instructions, for example, is carried out for 30 seconds, and said microcomputer 27 manages setting out of these regeneration time.

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0014Said microcomputer 27 makes said autochanger part 10 read the TOC information of each disk stored in the device concerned simultaneously with powering on to the device concerned, and it was made to make said RAM25 memorize the read TOC information concerned.

0015Operation of the CD autochanger device concerned is explained below. Drawing 2 is a flow chart which shows the processing operation of the microcomputer 27 in scanning mode processing of the CD autochanger device concerned.

0016With the scanning mode processing concerned, if the input of said all scan instructions is received, will reproduce only the head part in each music of the selected disk concerned for 10 seconds at a time one by one, and. If the input of said disk scan instructions is received, each disk stored in the device concerned is chosen, and it is made to reproduce only the head music of the selected disk concerned, while **30 seconds at a time** it is longer than the regeneration time of said all scan.

0017In drawing 2, the microcomputer 27 judges whether the all scan key in said final controlling element 21 was inputted (Step S11). If the all scan key concerned was inputted, for 10 seconds will be set to the scan reproduction timer in the microcomputer 27 concerned (Step S12), Until while **10 seconds** making said autochanger part 10 play the head music of the selected specification disk concerned based on the TOC information memorized by said RAM25 (Step S13) and setting by said scan reproduction timer passes, It is judged whether for the 10 seconds concerned passed (Step S14).

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0019At Step S16, if there is no following music in a specification disk, the processing operation

of the scanning mode processing concerned will be ended.

0020If an all scan key was not inputted at Step S11, it will be judged whether the disk scan key was inputted (Step S20).

0021If the disk scan key concerned was inputted, a disk will be made to choose from the inside of the device concerned based on the specified order beforehand set as said autochanger part 10, for example (Step S21), For 30 seconds is set to said scan reproduction timer (Step S22), Said autochanger part 10 is made to play the head music of the disk selected at Step S21 based on the TOC information memorized by said RAM25 (Step S23), It is judged whether for the 30 seconds concerned passed until while **30 seconds** being set by said scan reproduction timer passes (Step S24).

0022If for the 30 seconds concerned passed, the music playback concerned will be stopped (Step S25), and it will be judged whether based on the TOC information memorized by said RAM25, there is any remaining disk for a disk scan (Step S26). If there are the remaining disks concerned, the following disk will be made to choose it as said autochanger part 10 based on said specified order (Step S27), for 30 seconds will be set to said scan reproduction timer (Step S28), and it will shift to Step S23.

0023If it remains at Step S26 and there is no disk, i.e., the disk for a disk scan, the processing operation of the scanning mode processing concerned will be ended.

0024According to the above-mentioned example, reproduce only the head part of each music recorded on the disk selected according to the all scan command input one by one for 10 seconds at a time in the autochanger part 10, and. According to a disk scan command input, each disk under storage in the device concerned is chosen one by one, Since it was made to make it the every regeneration time longer than the time of said all scan in said autochanger part 10, i.e., for 30 seconds, play, only the head music recorded on the selected disk concerned, For example, even if the head part of head music is a case where disk scan instructions are received for the disk with which the music which recorded the live which hears only the applause sound of the music and spectator who recorded the wave sound as a sound effect was recorded, the user can perform disk discrimination in the device concerned certainly.

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0026In the all scan of the set period of said scan reproduction timer, in the disk scan for 10 seconds, it was for 30 seconds, but it cannot be overemphasized that it is not a limitation of this figure.

0027

Problem(s) to be Solved by the InventionHowever, according to the above-mentioned conventional disk reproduction device, for example the head part of head music, When a disk scanning function is started for the disk with which the music which recorded the live which hears only the applause sound of the music and spectator who recorded the wave sound as a sound effect was recorded, Since only the same predetermined time as said all scanning function did not reproduce the head part of the head music of the disk concerned, the user listened to playback of the predetermined time concerned, and had the problem that it could not be distinguished what disk the disk concerned is.

0006This invention is made in view of the above-mentioned problem, and there is a place made into the purpose in providing the disk reproduction device which ensures disk discrimination of the user at the time of a disk scanning function.

Means for Solving the ProblemTo achieve the above objects, this invention is characterized by a disk reproduction device comprising the following.

A disk storing means which stores a disk of two or more sheets.

A disk reproducing means which plays a selected disk.

A control means which inputs all scan instructions or disk scan instructions.

Make predetermined time and sequential play only a head part of each music recorded on a disk selected according to an all scan command input by the control means concerned in said disk reproducing means, and. A control means which reproduces only head music which chose each

disk under storage to said disk storing means one by one according to a disk scan command input by said control means, and was recorded on the selected disk concerned in said disk reproducing means for a long time than said predetermined time.

Brief Description of the Drawings

Drawing 1 It is a block diagram showing the outline composition inside the CD autochanger device which applied the disk reproduction device of this invention.

Drawing 2 It is a flow chart which shows the processing operation of the microcomputer in scanning mode processing of the CD autochanger device of this example.

Description of Notations

10 Autochanger part (a disk storing means, disk reproducing means)

21 Final controlling element (control means)

27 Microcomputer (control means)

Drawing 1

For drawings please refer to the original document.

Drawing 2

For drawings please refer to the original document.

For drawings please refer to the original document.

PATENT ABSTRACTS OF JAPAN

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(54) DISK REPRODUCTION DEVICE

(57)Abstract:

PURPOSE: To secure the discrimination of a disk at the time of disk scanning mode by providing with a scanning mode function for multiply housed disks.

CONSTITUTION: A microcomputer 27 decides an input of all scanning for an operation part 21, and a scanning reproducing timer of the microcomputer 27 is set to 10 seconds and a starting music of a disk designated at an auto-changer 10 is reproduced according to TOC information stored in RAM 25. Also, in the case of an input from the operation part 21, a disk is selected into the changer 10 from the device in a prescribed order, and the reproducing timer is set to 30 seconds and the starting music of the selected disk is reproduced according to the TOC information of the RAM 25 by the changer 10 for 30 seconds each longer than all scanning time. Consequently, disk discrimination in the device is secured even by an object disk scanning instruction for the disk in which only an effects part and live applauding sounds are recorded.

